

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

FLORIDA SECTION.

Alexander J. Mitchell, Meteorologist.

VOL. XXIII. JACKSONVILLE, FLORIDA, SEPTEMBER, 1919. No. 9.

GENERAL SUMMARY.

The month was slightly warmer than usual, and, contrary to normal conditions, it was exceptionally dry, the deficiency in rainfall being 2.16 inches, marking the month as one of the driest Septembers of record. The bulk of the month's rain occurred during the first half, exceptionally heavy amounts having fallen in several southeastern counties on the 9-10.

The factor of moment was the hurricane which dominated Florida weather during the 9 and 10, extreme conditions occurring on the 10, when exceptionally low pressure and high winds prevailed at Key West and in adjacent waters. See detailed report on reverse side of this publication. Winds of gale force occurred over the peninsula to the north of Miami, attended by heavy rains northward to Broward County. Reduced barometer readings, as reported from the several sources, were: Key West, 28.91; Sand Key, 28.35; Rebecca Light, 40 miles to the westward, 27.68, and Dry Tortugas, 65 miles to the westward, 27.51, inches.

The month was favorable for haying, and the harvesting of corn, and peanuts, although such work was delayed to some extent by showers. The bulk of the short staple cotton was picked. The long staple cotton was greatly reduced by the weevil. The yield of both varieties of cotton will be the shortest of record. Cane, sweet potatoes, velvet beans, and citrus fruits did well. Dry weather and rather high temperature, however, were unfavorable for strawberries and truck, especially on high lands. A portion of the citrus crop was damaged on the lower southeast coast by the hurricane,* and seed beds and early truck, also, suffered to some extent.

TEMPERATURE.

The monthly mean temperature from the records of 71 stations was 79.5°, or 0.2° above the normal. The highest monthly mean was 82.6° at Long Key, and the lowest was 74.0° at De Funiak Springs. The highest temperature was 99° at Marianna on the 18, and the lowest was 50° at 3 stations on the 29 and 30. The greatest daily range was 44°.

PRECIPITATION.

The average precipitation for the month, 75 stations report-

ing, was 4.83 inches, or 2.16 inches below the normal. The greatest monthly amount was 14.26 inches at Key West. The greatest amount in 24 consecutive hours was 11.95 inches at Key West on the 9-10. The average number of rainy days was 11.

DATES OF MISCELLANEOUS PHENOMENA.

Halos, Lunar: Key West on 5; Sand Key, 1, 5; Tampa, 2. *Halos, Solar:* Key West, 8, 14; Miami, 8, 29; St. Leo, 10, 13; Sand Key, 16; Tampa, 8, 10, 13. *Hurricane:* Long Key, 9-10. *Winds, High:* Bradentown, 10; Moore Haven, 9; St. Andrews, 11; St. Petersburg, 11; Tarpon, 10. *Tides, High:* Tarpon, 11. *Thunderstorms:* On 27 days. *Hail:* Brooksville, 1.

PRESSURE, WIND, HUMIDITY, AND SUNSHINE DATA.

Stations.	Atmospheric pressure. (Reduced to sea level.)					Wind.			Mean relative humidity.			Percentage of sunshine.	
	Mean.	Highest.	Date.	Lowest.	Date	Average hourly ve- locity.	Maximum velocity.	Direction.	Date.	8 a. m.	Noon.		8 p. m.
Jacksonville...	30.00	30.15	28	29.81	11	12.3	36	ne.	28	88	69	82	63
Key West.....	29.89	30.03	20	28.81	10	11.9	110	e.	10	76	71	76	62
Miami.....	29.94	30.07	20	29.67	9	9.6	46	se.	9	79	69	77	64
Pensacola.....	29.99	30.20	28	29.74	11	12.6	39	se.	13	78	63	69	70
Sand Key.....	29.91	30.00	20	28.35	10	13.5	115	ne.	9	72	73	74	61
Tampa.....	29.95	30.09	7	29.71	10	6.9	34	e.	20	83	56	75	69

COMPARATIVE DATA FOR SEPTEMBER.

Year.	Temperature.					Precipitation.				Number of days.			
	Mean.	Departure.	Highest.	Lowest.	Average.	Departure.	Greatest monthly.	Least monthly.	Greatest in 24 hours.	With precipitation (0.01 inch or more.)	Clear.	Partly cloudy.	Cloudy.
1891..	78.9	-0.3	94	59	8.23	+1.10	16.00	0.95	.....	14	10	14	6
1892..	78.5	-0.7	94	60	9.58	+2.45	16.67	1.72	.....	17	7	14	9
1893..	78.9	-0.3	100	59	6.41	-0.72	12.49	2.23	5.54	10	14	10	6
1894..	78.3	-0.4	100	59	13.31	+6.18	19.78	4.11	12.50	14	11	11	4
1895..	79.5	+0.3	96	57	4.77	-2.36	9.13	1.14	3.30	12	11	15	4
1896..	79.5	+0.3	100	48	4.42	-2.71	11.12	0.70	5.11	10	9	17	4
1897..	77.2	-2.0	99	46	10.71	+3.58	23.01	1.94	10.25	13	10	11	9
1898..	80.0	+0.8	97	52	5.35	-1.78	17.93	1.19	4.73	12	12	13	5
1899..	78.2	-1.0	97	40	4.78	-2.33	11.27	0.14	2.76	10	13	13	4
1900..	80.4	+1.2	99	56	4.75	-2.38	10.50	0.80	3.87	10	16	10	4
1901..	79.1	-0.1	98	54	8.38	+1.25	17.55	3.37	8.00	10	12	10	8
1902..	79.4	+0.2	100	53	9.44	+2.31	20.25	3.37	6.00	16	8	14	8
1903..	77.9	-1.3	103	43	7.28	+0.15	19.04	0.00	9.00	9	14	10	6
1904..	79.4	+0.2	102	50	4.36	-2.77	8.92	0.29	4.35	9	14	12	4
1905..	80.6	+1.4	103	58	7.62	+0.49	17.73	2.58	10.00	12	12	12	6
1906..	80.8	+1.6	100	60	5.50	-1.63	19.30	1.04	10.12	10	14	11	5
1907..	80.0	+0.8	102	56	8.58	+1.45	20.05	2.94	8.00	15	9	15	6
1908..	78.5	-0.7	98	46	9.45	+2.32	21.79	0.51	9.79	14	9	13	8
1909..	78.5	-0.6	98	42	4.09	-3.10	18.16	0.75	5.90	9	14	12	4
1910..	79.3	+0.3	100	48	3.22	-4.18	10.35	0.46	3.88	7	16	11	3
1911..	81.2	+2.0	100	58	3.95	-3.25	14.27	0.40	3.85	9	16	11	3
1912..	80.5	+1.4	103	64	9.54	+2.88	28.14	2.08	8.95	15	9	12	9
1913..	78.0	-1.1	98	41	5.89	-1.42	22.87	1.78	6.58	11	12	12	6
1914..	77.8	-1.4	100	50	7.27	+0.35	13.41	2.42	5.83	13	8	13	9
1915..	80.9	+1.8	101	53	4.97	-2.01	10.70	0.97	7.71	10	14	10	6
1916..	78.5	-1.0	97	46	4.95	-2.03	9.99	1.50	5.77	11	12	12	6
1917..	78.4	-1.1	101	49	7.73	+0.48	18.71	2.27	6.67	15	5	12	10
1918..	77.6	-1.8	98	44	6.42	-0.70	14.22	1.85	4.84	11	12	12	6
1919..	79.5	+0.2	99	50	4.83	-2.16	14.26	0.43	11.95	11	14	12	4

ERRATA.

St. Augustine, page 68 this issue: mean temperature should be 77.4, departure -1.2 minimum 62 on 28th, greatest daily range, 21.

Climatological Data for September, 1919.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Number of days.				Prevailing direction of wind.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Snowfall, unmelted.	With 0.1 or more precipitation.	Clear.	Partly cloudy.			Cloudy.
Northern Division.																				
Archer	Alachua	92	33	79.3 ^a	+0.3	95	23	57	29	28	3.92	-2.29	2.30	0	10	19	9	2	.....	Miss Maude Morper.
Bristol	Liberty	50	9																.....	J. J. Blomquist.
Carrabelle	Franklin	10	20	78.8	-0.2	91	11 [†]	59	29	27	1.02	-6.28	0.98	0	2				.....	Mrs. Olivia White.
Cedar Keys	Levy	20	30	81.2	+1.7	95	9	63	29	23	5.78	-0.06	2.00	0	5	14	14	2	e.	Walter Cliff.
Crescent City	Putnam	45	20	77.5	-1.9	91	21 [†]	64	27	24	5.18	-1.66	2.65	0	10	8	18	4	se.	E. S. Hubbard.
Federal Point	do	10	27	79.1	+0.6	96	23	65	26	27	10.27	+2.47	2.09	0	17	10	16	4	ne.	
Fenholloway	Taylor	75	12																.....	F. C. Pennington.
Fernandina	Nassau	15	26	78.2	0.0	93	12 [†]	64	26	23	4.75	-3.51	1.40	0	10	11	1	18	ne.	J. R. Watson.
Gainesville	Alachua	176	23	78.6	-0.1	92	18 [†]	61	29	23	6.90	+1.18	2.20	0	10	9	19	2	ne.	Mrs. J. B. Campbell.
Hilliard	Nassau	69	10	77.6		95	12	60	26	26	4.71		1.42	0	10	18	11	1	ne.	U.S. Weather Bureau.
Jacksonville	Duval	222	48	77.4	+0.1	91	12	64	29	19	5.63	-2.40	3.22	0	13	11	13	6	ne.	
Jasper	Hamilton	152	17																.....	Mrs. A. L. Smith.
Johnstown	Bradford	125	20	78.4	-0.5	95	7	60	30	26	2.82	-2.38	1.05	0	6	9	7	14	ne.	W. B. Knight.
Lake City	Columbia	210	35	78.7	+0.3	96	12 [†]	59	27	27	3.80	-1.58	1.11	0	9	15	3	12	ne.	
Live Oak	Suwannee	109	18																.....	C. M. Griffing & Co.
Macclesney	Baker	125	23																.....	T. C. Merchant.
Madison	Madison	143	19	78.5	-0.4	94	11 [†]	59	29	23	2.59	-2.93	0.73	0	10	17	9	4	.....	H. von Noszky.
Melrose	Alachua	168	5																.....	G. A. Chalker.
Middleburg	Clay	39	18	78.2 ^a	-0.2	95	23	59	27	28	6.29	-0.63	1.43	0	12				.....	Sunbird Nurseries.
Monticello	Jefferson	207	14	78.6 ^a	+0.2	94	18 [†]	58	29	27	0.86	-5.39	0.58	0	4	22	7	1	e.	Daniel Grubb, Jr.
Mount Pleasant	Gadsden	306	13	77.0	-0.5	95	17 [†]	50	29	37	0.43	-5.82	0.15	0	4	19	10	1	ne.	W. J. Green.
Old Town	Lafayette		1	79.6		96	23	59	27	28	4.72		2.00	0	9	11	16	3	e.	L. M. May.
Quincy	Gadsden		1	77.6		95	17	54	29	30	1.02		0.93	0	8	18	9	3	s.	Wm. F. Brown.
St. Augustine	St. Johns	10	67	77.2	-1.4	92	12	60	13	26	10.26	+3.77	3.56	0	16	15	11	4	ne.	Satsuma Company.
Satsuma Heights	Putnam	98	11	78.6	+0.6	97	11	64	29	24	6.19	+1.30	2.10	0	8	9	10	11	ne.	Mrs. W. C. Steele.
Switzerland	St. Johns	14	26	77.6 ^a	-0.2	91	23	64	27	22	7.56	-0.50	1.80	0	16				w.	W. H. Markham.
Tallahassee	Leon	192	32	77.5	+0.9	92	11 [†]	59	29	23	1.26	-3.83	0.60	0	7	17	9	4	w.	
Central Division.																				
Bartow	Polk	115	32	80.6	+0.9	94	5 [†]	63	27	28	3.39	-4.62	0.74	0	13	17	13	0	e.	C. A. Roswell, Jr.
Brooksville	Hernando		27	79.4	-0.2	93	5 [†]	62	27	27	4.37	-2.63	1.34	0	14	19	10	1	ne.	Bur. Plant Industry.
Clermont	Lake	105	26	81.2	+0.5	96	24	68	27	22	2.79	-3.80	1.25	0	12	12	12	6	se.	E. H. Moore.
De Land	Volusia	27	22	80.4	+1.7	96	11 [†]	63	27	28	4.00	-1.31	0.90	0	15	19	8	3	s.	A. T. Pattillo.
Eustis	Lake	56	28	80.4	+0.6	95	5 [†]	65	29	25	5.28	-1.07	1.74	0	14	20	9	1	ne.	C. T. Smith.
Fellsmere	St. Lucie	25	7	80.5		92	1 [†]	69	3 [†]	21	10.13		2.62	0	20	11	14	5	se.	J. S. Lloyd.
Fort Meade	Polk	125	30	80.7	+1.0	94	15	65	27	25	6.00	-2.23	1.18	0	14	7	22	1	se.	Dr. R. C. McClellan.
Fort Pierce	St. Lucie	10	18	81.4	+1.5	92	1 [†]	70	30	20	2.82	-4.27	0.91	0	14	0	22	8	e.	T. C. Nicholson.
Inverness	Citrus	43	20	79.6	+0.6	92	12	64	29	21	5.74	-0.04	1.55	0	12	0	25	5	sw.	W. H. Miller.
Isleworth II	Orange		3								4.49		2.70	0	4				.....	A. Q. Lancaster.
Kissimmee	Osceola	65	27																.....	W. L. Pouik.
Lakeland	Polk	227	4	79.4		92	18 [†]	64	29	21	5.30		4.84	0	2	27	3	0	ne.	A. J. Holworthy.
Lucerne Park	do		7																.....	L. D. Niles.
Lynne (near)	Marion		28								3.74		0.98	0	13	25	4	1	ne.	U. S. Forest Service.
Malabar	Brevard	28	27	82.0	+1.6	96	24	69	30	25	3.72	-3.71	0.43	0	16	11	13	6	e.	J. F. Farley.
McDonald II	Orange	175	22	79.6	+0.4	94	5 [†]	65	29	26	4.59	-1.31	1.52	0	10				ne.	F. B. Scott.
Merritts Island II	Brevard	20	36	79.4	-0.7	89	1 [†]	68	3 [†]	19	8.39	+0.78	2.30	0	13	19	9	2	e.	R. Ulrich.
New Smyrna	Volusia	14	34																.....	F. J. Nordman.
Ocala	Marion	38	27	79.4	+0.6	93	11 [†]	62	30	26	4.03	-2.76	1.95	0	13	7	13	10	ne.	F. G. B. Weihe.
Okeechobee	Okeechobee		1	80.3 ^a		93	11 [†]	68	27	22	3.84		0.96	0	10	13	14	3	ne.	L. F. Scharfshwerdt.
Orange City	Volusia	39	25	79.9	+0.3	96	22 [†]	62	27	30	4.29	-1.83	1.03	0	13	6	21	3	ne.	E. J. Ireland.
Orlando	Orange	111	27	81.2	+1.7	98	22 [†]	63	27	30	2.38	-6.01	0.62	0	9				n.	W. S. Branch.
Oxford	Sumter					92	23												.....	B. F. Smith.
Pinellas Park	Pinellas	20	7	80.5		92	6 [†]	67	27	22	3.91		0.97	0	11	24	3	3	w.	Miss Lillian German.
Plant City	Hillsboro	121	26																.....	Dunellon Phos. Co.
Rockwell	Marion	54	17																.....	J. J. Johnston.
St. Cloud	Osceola		5	79.8		92	17 [†]	68	29	21	3.56		0.77	0	10	4	24	2	se.	Gerard Schneider.
St. Leo	Pasco	190	24	78.4	-1.2	90	5	64	29	20	2.97	-3.50	1.11	0	12	13	15	2	e.	The Independent.
St. Petersburg	Pinellas		4	81.4		92	4 [†]	68	29	19	6.59		1.53	0	14	12	14	4	ne.	H. C. Dubose.
Sanford	Seminole	25	11	79.9	+1.2	95	22	64	27	28	4.46	-1.19	0.97	0	9	18	8	4	nw.	U. S. Weather Bureau.
Tampa	Hillsboro	104	29	80.8	+1.1	93	6	67	29	23	6.82	-0.59	2.05	0	10	2	21	7	ne.	A. P. Abbaugh, M. D.
Tarpon Springs	Pinellas	20	34	81.1	+1.5	95	6 [†]	64	29	24	2.65	-4.40	0.99	0	11	10	20	0	w.	Wm. J. Bailey.
Titusville	Brevard	16	23	80.0	+0.5	94	24	66	27	24	7.06	-0.50	2.47	0	14	6	22	2	e.	
Southern Division.																				
Arcadia	De Soto	61	17	80.9 ^a	+0.8	93	1 [†]	67	27	23	4.89	-1.93	1.82	0	12	14	11	5	sw.	A. Roe.
Avon Park	do	150	29	79.6	-0.6	93	16	68	27	21	7.01	+1.20	1.87	0	13	7	21	2	e.	William King.
Boca Grande	Lee	11	3								4.02		1.90	0	4	20	8	2	sw.	Roca Gr. Land Co.
Bradenton	Manatee	22	35	80.1	+0.2	95	23	67	28	21	5.15	-2.45	1.50	0	12	13	13	4	w.	F. H. Brayner, M. D.
Davie	Broward	10	6	79.1		90	4 [†]	67	24	21	7.07		1.97	0	14	10	15	5	se.	Oscar Freitag.
Fort Lauderdale	do	10	6	81.0		93	26	63	30	25	6.60		2.80	0	10	17	9	4	se.	A. J. Willsey.
Fort Myers	Lee	12	47	81.1	+1.2	93	3 [†]	66	30	23	5.04	-2.63	1.88	0	13	10	20	0	e.	J. F. Alford.
Griffin II	Broward	12	6	79.4		91	25	68	1 [†]	21	7.27		1.65	0	11	17	13	0	e.	T. M. Griffin.
Homestead	Dade	13	9	79.6		92	1 [†]	62	29	28	6.28		2.78	0	11	12	7	11	se.	A. H. Waldin.
Hypoluxo	Palm Beach	9	24	79.																

Daily precipitation for September, 1919.

Stations.	Watersheds.	Day of month.																															Total.	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Northern Division.																																		
Archer III	Waccassassa	.52	.07	.02				.08			T.			.08	2.30	T.		.13	.01								.15			T.	.56		3.92	
Bristol	Apalachicola																																	
Carrabelle	Coast		T.											.04	.98																		1.02	
Cedar Keys	do	1.38				.40								1.50						2.00	.50												5.78	
Crescent City	St. Johns	.25				.04	.01		1.29		.24	.17	2.65	.16	.02		.35																5.18	
Federal Point	do	.85	.03		.17		.17		.25	1.03	.34	.01	.73	2.09	.01	.01									1.86			.80	.64	.08	1.20		10.27	
Fenholloway	Fenholloway																																	
Fernandina	Coast	.20	.25	1.40		.20		.05						.90	.15		.10									.20					1.30		4.75	
Gainesville III	Lake	1.10	.74	T.			.52	.02		T.	T.	T.	2.20	T.	.10		.52		1.42				.22		.06							6.90		
Hilliard	Nassau	1.42	.20	.85							.21		.36	.32		.10												.65		.05	.55		4.71	
Jacksonville ***	St. Johns	.92	.06	.04		T.		.02	T.	.07	T.	.04	.05	.39	.57	T.	.27							.12	T.				.01	T.	3.07		5.63	
Jasper	Suwannee																																2.88	
Johnstown	do	.31	.09	.93								.20		.30																	1.05		3.80	
Lake City III	do	1.11	.66	.40				.11					.04	.60	.03	.10	.75																	
Live Oak	do																																	
Macclenny	St. Marys																																2.59	
Madison II	Suwannee	.26	.73	.12	.01			.13	T.				.01	.03	T.	.63	T.			.59	T.			.08									5.72	
Malrose	Lake	T.		.44	T.	.40	T.		.18	.23		.10	.25	1.82	.25	T.	.27								.24						1.75		6.29	
Midway	St. Johns	.90		.12																													0.86	
Monticello	Aucilla		.58																														0.43	
Mount Pleasant	Apalachicola	.10											.15	.12		.06																	4.72	
Old Town	Suwannee	.12	.74				.47							.18	.07	.72	.14			.28													1.02	
Quincy	Ocokeonee		.04	T.		T.	.07		.08	.40	T.		.02	.63	.13					.04	.06	T.		.03									10.26	
St. Augustine	Coast	.71	.38	.03		.07	.18	.06	.03	.40	T.			.84	.02	T.	3.20											.32	.41	.03	3.56		6.19	
Satsuma Heights	St. Johns	.91					.85			.60			2.10	.15		.15										.25							7.56	
Switzerland III	do	.10	.92		.11	.02	.05	.11			.52		1.59	.20	.09	.15		1.80								1.50							1.26	
Tallahassee III	Ocokeonee	.60						.10				.10		.08		.20																		
Central Division.																																		
Bartow III	Peace Creek	.55	.04	.12				.03		.05		.42	.20	.04		.24	.44	.24	.47	.01						.74							3.39	
Brooksville	Withlacuche	.59					.03		.01		.01	.05		.06	.01	.24	.52	.11	1.25					1.34		.05							4.37	
Clermont	Lake	.38				.16		.13				.10			.43	.06		.13								1.25	.02	.08					2.79	
De Land	St. Johns	.13	.10	.15		.10		.07	.26		.60	.02	.10			.09										.17	.35						4.00	
Eustis III	Lake	.44	.13			.78	.44	.04	.02	.30	.01			.42	1.74	.11		.04	2.62	T.	.81	T.	.78	T.	.69	.10	.16						5.28	
Fellsmere	Sebastian	T.	.08	2.33	.51	.57	T.	.07	.10	.28	.01	.03	.01	.01				.58	.40	.90													10.13	
Fort Meade III	Peace Creek	.77		.17		.02	.40	.17		.72		.14	.12					.42	.42	.02													6.00	
Fort Pierce III	Indian		.22	.16	.04		.11		.91	.06	.02						.42	.58	.32	.18													2.82	
Inverness III	Withlacuche	1.55	.65			.15								.41	.58																		5.74	
Isleworth	Lake	.15	2.70			.71													.98														4.49	
Kissimmee	Kissimmee																																	
Lakeland	Peace Creek											.46						4.84															5.30	
Lucerne Park	do																																	
Lynne (near)	Ocklawaha	.14	.06			.06	.04		.02		.03	.87						.30	.98						.25	.93							3.74	
Malabar	Indian		.34	.22		.27	.07	.31	.43	.33	.30			.02	1.52			.28															3.72	
McDonald	Lake	.01	.04	.78		.85	.04		.25																								4.59	
Merritts Island	Indian		.40	1.17		.51	.54	2.30	.98		T.																						8.39	
New Smyrna III	Coast																																	
Ocala	Ocklawaha	.45				.02			.26	.06		1.95	T.	.04	.26	.01	.51	T.							.25	.01		.15					4.03	
Okeechobee	Lake		.13	.78		.48		.11	.22	.31	.48		.18														.96						3.84	
Orange City	St. Johns	1.03	.12	.96		.18			.24	.09	.58		.04				.05																4.29	
Orlando III	do	.32	.12	.25		.48					.04																						2.88	
Oxford	Withlacuche																																	

Daily temperatures for September, 1919.

Stations.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Mean
Northern Division.																																
Cedar Keys	Maximum	88	85	89	90	91	92	93	92	95	90	92	91	90	90	91	90	88	89	88	88	91	93	94	90	89	90	88	85	85	89.9	
	Minimum	69	69	71	72	71	72	74	71	72	72	77	75	70	75	71	74	75	71	75	73	76	77	78	77	74	70	68	63	68	72.6	
Crescent City	Maximum	83	91	86	85	83	82	81	83	82	85	91	91	85	84	89	91	88	89	86	86	84	85	87	86	83	85	81	81	80	84.9	
	Minimum	70	67	69	72	72	71	72	72	70	73	76	72	69	72	72	70	71	69	71	69	69	69	73	71	67	64	69	64	67	70.1	
Fernandina	Maximum	80	84	81	85	86	79	87	85	86	88	89	93	84	84	86	85	93	86	85	89	87	87	93	84	83	83	79	78	73	85.2	
	Minimum	70	68	72	72	73	73	72	72	74	75	76	75	70	73	74	71	72	72	75	70	72	72	70	71	67	64	67	61	65	71.1	
Gainesville	Maximum	84	86	87	88	87	89	87	86	88	89	91	90	89	88	88	88	91	92	89	90	90	91	92	90	90	86	85	81	81	80	87.8
	Minimum	69	68	71	70	68	72	72	70	72	74	76	73	66	69	68	72	69	70	70	72	70	71	70	72	70	65	66	61	64	69.5	
Jacksonville	Maximum	83	83	78	81	82	82	84	82	83	86	87	91	80	80	82	84	90	85	83	84	85	88	91	83	82	80	80	76	76	73	82.6
	Minimum	69	70	71	71	73	75	75	72	73	76	76	72	70	71	73	74	73	74	76	76	76	74	73	69	68	67	68	64	67	72.1	
Lake City	Maximum	86	86	85	89	88	90	92	88	90	94	95	96	82	86	90	89	94	94	93	93	95	96	96	91	86	87	86	84	82	81	89.5
	Minimum	69	66	69	67	66	70	70	68	69	71	73	71	68	69	66	70	69	68	71	70	69	69	70	71	69	61	59	63	59	67	67.9
Live Oak	Maximum																															
	Minimum																															
Macclenny	Maximum																															
	Minimum																															
Madison	Maximum	83	82	82	87	87	87	87	88	90	92	94	94	81	35	88	88	93	92	88	90		93	92	89	87	87	86	85	82	86	87.8
	Minimum	70	67	69	69	67	72	72	70	69	71	74	73	71	71	69	71	70	70	71	72	72	73	70	67	64	63	64	59	64	69.2	
Monticello	Maximum	91	86		90	88	82	89	87	88	92	92	93	83	83	89	93	94	94	89	88	93	91	89	87	86	85	82	89			89.2
	Minimum	72	65		67	65	71	72	69	65	69	72	72	71	69	67	70	72	71	71	70	71	70	71	69	65	63	62	58	62		68.9
Mount Pleasant	Maximum	84	87	83	87	85	89	88	88	87	90	91	84	87	87	91	95	93	91	90	91	93	95	87	87	87	85	87	89			85.6
	Minimum	66	64	65	67	65	69	70	68	63	66	70	72	69	70	65	63	66	70	68	68	66	66	67	68	63	62	60	56			85.3
St. Augustine	Maximum	84	83	83	85	83	87	88	84	85	89	86	92	86	82	83	89	90	89	88	87	88	91	89	84	83	82	79	76			85.0
	Minimum	69	67	69	74	72	73	74	74	70	68	74	74	68	74	63	69	70	69	72	72	71	71	70	69	68	63	62	62	68		69.9
Tallahassee	Maximum	82	86	85	87	86	87	85	87	87	90	92	89	89	87	86	88	92	90	89	88	86	86	89	84	84	83	82	79	87		86.6
	Minimum	69	65	68	74	67	70	72	69	66	67	70	73	70	71	68	69	70	71	72	72	70	71	69	66	63	64	63	59	64		68.4
Central Division.																																
Bartow	Maximum	88	88	92	93	94	94	90	89	91	88	91	93	90	92	92	93	90	93	90	92	92	93	94	93	92	94	91	87	89		91.2
	Minimum	68	67	67	68	72	72	73	73	76	71	74	72	73	72	70	70	70	70	70	71	70	69	70	70	63	64	66	67			70.1
Brooksville	Maximum	83	87	91	92	93	98	90	88	90	90	93	93	93	92	91	89	90	91	92	93	93	93	90	89	90	89	87	85	81		90.9
	Minimum	68	65	68	71	69	69	72	69	71	75	71	71	70	72	70	68	69	68	68	69	69	67	69	71	62	67	62	65			68.9
De Land	Maximum	90	92	94	92	95	90	91	89	88	93	96	95	92	94	92	94	95	94	94	93	95	95	94	96	94	91	91	86	79		91.3
	Minimum	68	67	67	71	70	71	71	71	73	74	74	72	71	72	71	70	70	68	68	67	68	67	71	71	70	63	68	65	69		69.6
Eustis	Maximum	87	90	92	92	95	90	88	86	90	89	92	94	91	88	88	91	92	92	94	93	92	94	95	91	89	89	86	81	78		90.0
	Minimum	70	67	69	71	71	72	72	74	75	76	76	72	72	72	72	71	72	70	70	70	71	70	73	70	66	68	65	66			70.8
Fort Pierce	Maximum	92	89	88	89	90	88	88	86	85	86	88	90	89	88	88	88	88	88	88	91	89	91	92	91	87	88	84	82			88.5
	Minimum	74	72	74	75	76	77	78	78	75	78	78	78	75	72	73	74	74	75	74	75	74	75	74	75	74	71	71	70			74.4
Inverness	Maximum	85	86	89	90	91	91	89	87	89	85	90	92	88	87	89	90	87	89	89	89	90	90	91	86	86	87	84	83	80		87.9
	Minimum	67	68	70	73	71	73	73	73	73	78	75	70	74	72	71	70	73	71	72	73	72	71	70	72	72	69	64	69			71.4
Kissimmee	Maximum																															
	Minimum																															
Malabar	Maximum	92	91	89	92	93	93	91	88	92	89	88	90	92	93	92	95	95	91	92	92	93	95	93	96	90	86	88	85	84		90.9
	Minimum	71	71	70	72	73	77	77	76	73	72	77	75	78	75	77	73	73	71	71	71	72	75	72	71	72	74	70	72	71		73.2
Merritts Island	Maximum	89	87	85	85	87	89	86	84	86	86	88	88	84	85	86	87	85	85	87	86	87	87	89	85	85	84	84	79	81		85.8
	Minimum	70	70	68	73	73	75	74	74	74	76	76	77	77	75	72	75	72	74	72	73	71	73	75	73	72	72	70	74	71		73.0
Ocala	Maximum	87	88	89	89	90	89	91	89	92	89	93	91	89	90	88	90	90	90	92	91	93	93	87	87	86	83	82	85	87		89.4
	Minimum	63	68	67	70	68	72	70	71	72	72	76	75	69	71	72	70	71	70	71	70	71	71	65	69	71	67	63	66	69		69.5
Okeechobee	Maximum	90	88	89	90	91	88	89	87	85	84	93	90	88	91	89	92	90	90	93	93	88	90	87	89	89	89					

HURRICANE OF SEPT. 9-10 AT KEY WEST.

The Official in Charge at Key West reports on the hurricane as follows:

"The storm that passed over Key West on September 9 and 10 was, without question, the most violent experienced since records at this station began. While the minimum barometric reading, 28.81 inches, was not as low as that recorded in 1909 (28.52), and in 1910 (28.47), the violence of the wind was undoubtedly greater. It is to be regretted that owing to the vibrations of the tower supporting the wind instruments the anemometer cups were shaken loose and blown away at 7:30 p. m. on the 9th in gusts ranging between 75 and 80 miles an hour, and thence on, until 3:35 p. m. of the 10th, the wind-velocity record was lost. The wind-vane was blown away at 12:45 a. m. of the 10th during the winds of greatest intensity, and at 3:16 a. m. the collector of the recording rain-gauge was blown off and the door forced open. The thermometer shelter held and temperature data are unbroken. In estimating the lost data great care has been taken, and advantage has been taken of notes made throughout the storm, and further advantage taken of the fact that the Official in Charge has experienced five hurricanes, which enables him to make a fairly accurate comparison.

"The first warning was received on the 8th at 9:55 a. m., as follows:

"Hoist northeast storm warning 10 a. m. Jupiter to Key West and at Ft. Myers, Florida. Disturbance near or over southwestern Bahamas apparently moving west-northwest. Strong northeast winds Monday, and will probably increase to gale force. Advise great caution until further advices later in the day."

"Storm warnings were immediately displayed, and the information disseminated.

"At 1:05 p. m. the following was received:

"Change to hurricane warnings 1 p. m. Jupiter to Key West. Delayed report from Nassau: Barometer 29.46 and wind 56 miles from the northeast. Storm center will probably reach south Florida coast to-night attended by dangerous northeast winds. Caution all vessels to avoid the Florida Straits, and the east Florida coast until further advices."

"Hurricane warnings were immediately displayed and the information disseminated by every available means. The response to this warning was immediate and there followed a period of great activity, especially as regards shipping. Vessels were moved to safer anchorage or better secured, and all weak places in residences and buildings of all descriptions were strengthened as much as possible by nailing and battening doors, windows, roof-hatches, etc. In the terrific gusts that prevailed during the height of the storm stanch brick structures had walls blown out, and large vessels, firmly secured, were torn from their fastenings or moorings and blown on the banks. Notwithstanding the great loss, estimated at \$2,000,000, the Official in Charge has been the recipient of many congratulations on the splendid service rendered by the Bureau.

"Owing to the very slow progressive movement of the storm in this vicinity winds of gale force and over lasted continuously from about 7 a. m. of the 9th to about 9:30 p. m. of the 10th, the apex of the storm was reached on the 9th at midnight when the center, moving slowly west-northwest, was south of and nearest the station. The center when at its nearest point was probably about 30 or 40 miles distant.

"Following is an hourly tabulation covering the period during which winds of gale force prevailed:

	Barometer	Wind direction	Max. velocity	Weather
Sept. 9, 7 a. m.	29.61	NE	36	Light rain
8	29.61	N-NE	38	Light rain
9	29.58	N	36	Threatening
10	29.56	N-NE	39	Light rain
11	29.54	NE	40	Light rain
12 noon	29.50	NE	37	Light rain
1 p. m.	29.46	NE	42	Light rain
2	29.40	NE	44	Mod. heavy rain
3	29.31	NE	48	Mod. heavy rain
4	29.27	NE	50	Mod. heavy rain
5	29.22	NE	54	Mod. heavy rain
6	29.13	NE	58	Mod. heavy rain
7	29.08	NE	58	Heavy rain
8	29.05	NE	70	Heavy rain
9	28.99	NE	80†	Heavy rain
10	28.97	NE	85†	Heavy rain
11	28.93	NE	90†	Heavy rain
12 mid.	28.81	E	105†	Heavy rain
Sept. 10, 1 a. m.	28.90	E	110†	Heavy rain
2	28.96	E	100†	Heavy rain
3	29.02	E	90†	Heavy rain
4	29.07	E	85†	Heavy rain
5	29.13	SE	80†	Heavy rain
6	29.20	SE	70†	Heavy rain
7	29.26	SE	70†	Heavy rain
8	29.35	SE	70†	Heavy rain
9	29.39	SE	60†	Light rain
10	29.44	SE	55†	Light rain
11	29.46	SE	50†	Light rain
12 noon	29.50	SE	48†	Light rain
1 p. m.	29.53	SE	48†	Light rain
2	29.52	S	45†	Light rain
3	29.56	S	40†	Light rain
4	29.57	S	40†	Light rain

† Estimated.

"From the forenoon of the 9th squalls of wind and rain progressively increased in force and frequency, culminating in terrific gusts of great violence between midnight

of the 9th and 2 a. m. of the 10th. As the storm's center slowly receded into the Gulf of Mexico to the westward the squall and gusts gradually became less violent and of less frequency. The usual phenomena preceding, accompanying, and following storms of tropical origin were present in this one; and while no thunder was heard diffused lightning was noted at intervals for several hours before the maximum force was reached.

"As previously stated the property loss is estimated at \$2,000,000, the air station alone losing about \$800,000. Probably not a structure on the island escaped being damaged more or less, the Weather Bureau building and grounds suffering quite badly. Three lives were lost by drowning.

"The rainfall was extremely heavy and continuous. The loss of rainfall record is unfortunate, but from the partial record obtained and from notes made the total amount is estimated at 13.39 inches, the heaviest occurring during the early morning hours of the 10th."

The Official in Charge, Key West, states further that "probably the lowest pressure readings recorded in this part of the world were noted in this storm, viz.: Key West, 28.83 inches; Sand Key, 28.36 inches; Rebecca Light, 40 miles to the westward, 27.68 inches; and Dry Tortugas, 65 miles to the westward, 27.51 inches. Two steamers in the vicinity of Tortugas reported still lower readings: 'Lake Winona,' 27.45 inches, and 'Fred W. Weller,' 27.36 inches. While, however, the last two readings have not, as yet, been authenticated, they do not appear unreasonably low when compared with 27.51 inches at Dry Tortugas.

Tornado at Goulds.

The Official in Charge, Miami, reports on a tornado at Goulds, as follows:

A tornado occurred at Goulds, Fla., a small town 20 miles southwest of Miami, between 1:00 p. m. and 1:15 p. m. of the 10th. At the time of occurrence, the tropical disturbance that passed through the Florida Straits on the 9th was central over the extreme southeastern Gulf of Mexico, within about 125 miles of the path of the tornado.

The tornado developed either over the ocean or Biscayne Bay, probably in the form of a waterspout. It moved in a west-northwest direction, directly with the strong southeast wind that prevailed in connection with the tropical disturbance. After leaving the bay, it crossed a 3-mile stretch of marsh land, and there were evidences that this part of the path was extremely narrow. It then entered a pine wood immediately east of Goulds, where the path rapidly widened. At Goulds, the path was about 600 feet in width. After passing over Goulds, the storm moved over a cleared area of about one-half mile in extent, when it entered another pine wood. It is interesting to note that the path through this second wood had narrowed to 100 feet, or less in width. The storm continued west-northwest, and was seen to disappear over the Everglades, about 14 miles from the point of entry on the shore of Biscayne Bay.

The tornado was attended by the characteristic pendant cloud, which was described by several persons as having a waving motion, with the detached end apparently moving through a space of 100 feet. It was not attended by rain or lightning, but the air in the path of the storm was filled with a fine mist.

There were many evidences of the whirling motion of the air. In the first wood through which the storm passed, the uprooted and broken trees apparently fell in all directions. At Goulds, debris from a demolished building was carried across the path of the storm and deposited on the side opposite to which the building stood. A hotel and a large packing house, which were on the northern edge of the path, were lifted from their foundations and moved 15 feet toward the center of the path.

In the second wood, where the path had narrowed to 100 feet, or less, there was no indication of a whirl. All the fallen trees, with one exception, lay with their tops to the northwest. One tree which fell toward the southwest was apparently leaning in that direction before the storm occurred. The fallen trees in this narrow part of the path indicated a straight blow, and it was apparently here that the storm developed its greatest force. A dwelling in a small clearing in this wood was completely demolished, and the concrete foundations of the house were pulled out of the ground. Many of the trees had large pieces of sheet-iron roofing wrapped around them or lodged in their tops, these pieces of roofing being part of the debris from wrecked buildings at Goulds, about one mile to the east.

At Goulds, 19 buildings were damaged and 6 were demolished. The monetary loss was approximately \$25,000.

There was no loss of life in connection with the storm, but five persons were injured by flying debris, and one girl was seriously cut by a piece of flying glass. The absence of fatal accidents was due to the fact that the occupants of all buildings that were demolished heard the approaching storm in time to escape into the open, where they threw themselves upon the ground.

The following is an incomplete list of vessels reported lost during the hurricane:

Eight scout patrol boats at Key West, American steamships Corydon, Monterey, Maud H. Dudley, Hillsboro, and Lake Ledaner. American schooners Palifax, Hugh De Payens and Copperfield. British steamship Bayrouto, and Spanish steamship Valbanera with passengers and crew of more than 300.